REMARKS

Applicants note the filing of an Information Disclosure Statement herein on August 4, 2000 and note that no copy of the PTO-1449 was returned with the outstanding Office Action. Applicants respectfully request that the information cited on the PTO-1449 be made of record herein and an initialed copy of the PTO-1449 be returned to Applicants' undersigned attorney evidencing same. Applicants include herewith a copy of the date stamped postcard evidencing receipt by the Office of the IDS and the PTO-1449 for the Examiner's convenience.

The Office Action mailed March 8, 2004, has been received and reviewed. Claims 1 through 19 are currently pending in the application. Claims 1 through 19 stand rejected. Applicants have amended claims 1, 3, 5, 7, 9, 10, 13-16, and 19, and respectfully request reconsideration of the application as amended herein.

Preliminary Amendment

Applicants' undersigned attorney notes the filing herein of a Preliminary Amendment on August 4, 2000, which filing was not acknowledged in the outstanding Office Action. Should the Preliminary Amendment have failed for some reason to have been entered in the Office file, Applicants' undersigned attorney will be happy to have a true copy thereof hand-delivered to the Examiner.

35 U.S.C. § 102(e) Anticipation Rejections

Anticipation Rejection Based on U.S. Patent No. 6,256,756 to Faulk Jr.

Claims 1 and 5 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Faulk Jr. (U.S. Patent No. 6,256,756). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Regarding claim 1, the Office Action indicates the Faulk Jr. reference teaches, "a **component** with **embedded memory** is manufactured. The component includes a plurality of memory buffers and a processor. During self-test of the component, the processor performs testing of the plurality of memory buffers in order to detect bad memory locations . . . The error log is disclosed to be a non-volatile memory."

However, the Faulk Jr. reference does not disclose each and every element as set forth in claim 1, either expressly or inherently described, as required for a valid 35 U.S.C. § 102(e) rejection. Specifically, Faulk Jr. does not disclose "a plurality of memory devices" on "a memory module." As stated by the examiner, Faulk Jr. discloses "a component with embedded memory," which to a person of ordinary skill in the art implies a single device containing some memory along with other functions on the same device. In the electronic arts and semiconductor industry "component" is routinely used to denote an integrated circuit device. On the other hand, the present invention includes a "plurality of memory devices" (i.e., components) as part of a "memory module." To further emphasize this distinction, Applicants have amended claim 1 to include a "memory module substrate" upon which the plurality of memory devices and the at least one non-volatile storage device are disposed.

Additionally, Faulk Jr. provides only a mechanism for marking bad memory locations to prevent further use during normal operation. This mechanism is stated in the Faulk Jr. reference as, "[a]s bad memory locations are discovered, the memory buffers which contain bad memory locations are identified in an error log 12. Since error log 12 is stored within the component, there is a record of memory buffers which **cannot be used**." (col. 3, line 19-23) Conversely, the present invention identifies memory modules containing failures so the failing memory modules can be repaired or replaced. To clarify this distinction, Applicants have amended claim 1.

Claim 1 recited the element of a "failed part." The element name failed part is intended to mean failed portion of a memory device rather than the possible interpretation of failed memory as was apparent from the Examiner's stated position in the Office Action. To address this issue and show reparability or replaceability, applicants have amended claim 1 to change the recited element "failed part" to "refurbishable failure," without limiting the scope of the invention as

initially claimed.

Finally, the Faulk Jr. reference uses "memory buffers" to refer to logical partitions of a memory rather than any physical partitions as evidenced by "[t]he memory space of memory 20 is broken up into memory blocks. The memory blocks need not be related to any actual physical structures of memory 20" (col. 2, line 66 to col. 3, line 1). Conversely, the present invention, while it may include repairable logical partitions within any memory device, is comprised of a plurality of memory devices, indicating at least some physical partitioning.

For these reasons, the Faulk Jr. reference does not disclose each and every element as set forth in amended claim 1, either expressly or inherently described. Therefore, amended claim 1 is allowable. As a result, Applicants respectfully request the rejection of claim 1 be withdrawn.

Regarding claim 5, claim 5 includes the memory module as recited in claim 1 as part of a computer system. Therefore, the same arguments put forth for claim 1 apply to claim 5. Additionally, Applicants have amended claim 5 with the same clarifying amendments used in amended claim 1. For these reasons, claim 5 is now allowable and Applicants respectfully request the rejection of claim 5 be withdrawn.

Anticipation Rejection Based on U.S. Patent No. 6,130,442 to Di Zenzo et al.

Claims 9 through 19 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Di Zenzo et al. (U.S. Patent No. 6,130,442). Applicants respectfully traverse this rejection, as hereinafter set forth.

Regarding claim 9, the Office Action indicates the Di Zenzo et al. reference teaches "a method of testing a **memory wafer**, recording the failure information **on the individual memory device** in a nonvolatile memory."

Applicants respectfully assert that Di Zenzo et al. do not disclose each and every element as set forth in claim 9, either expressly or inherently described, as required for a valid 35 U.S.C. § 102(e) rejection. The Di Zenzo et al. reference discloses testing a "memory wafer." Conversely, the present invention, as recited in claim 9, claims testing a "memory module."

It appears, from Applicants reading of the Di Zenzo et al. reference, that the method disclosed by Di Zenzo et al. is directed toward storing, in nonvolatile memory on each device, test information collected during wafer level testing of each individual device on the wafer. This information is subsequently available for testing performed during individual device assembly. On the other hand, the present invention recited in claim 9, if for "testing a memory module," not a wafer, and the test information is stored "on the memory module," not on or in each individual device. As with the amendments to claims 1 and 5, Applicants have amended claim 9 to emphasize this distinction by clarifying the "memory module" as a "memory module including a memory module substrate and a plurality of memory devices disposed on the memory module substrate."

For this reason, the Di Zenzo et al. reference does not disclose each and every element as set forth in amended claim 9, either expressly or inherently described. Therefore, amended claim 9 is allowable andApplicants respectfully request the rejection of claim 9 be withdrawn.

Regarding claims 10-14, claims 10-14 are dependent from now allowable amended claim 9. As a result, claims 10-14 are now allowable and Applicants respectfully request the rejection of claims 10-14 be withdrawn.

Regarding claim 15, the same arguments used with respect to claim 9 are also applicable for claim 15. Additionally, claim 15 includes "placing a plurality of memory devices on a memory module substrate." Applicants can find no reference to a "placing a plurality of memory devices" step in the Di Zenzo et al. reference.

For these reasons, the Di Zenzo et al. reference does not disclose each and every element as set forth in amended claim 15, either expressly or inherently described. Therefore, amended claim 15 is allowable and Applicants respectfully request the rejection of claim 15 be withdrawn.

Regarding claims 16-19, claims 16-19 are dependent from now allowable amended claim 15. As a result, claims 16-19 are now allowable and Applicants respectfully request the rejection of claims 16-19 be withdrawn.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 6,256,756 to Faulk Jr. in view of U.S. Patent No. 6,274,395 to Weber

Claims 2 through 4, and 6 through 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Faulk Jr. (U.S. Patent No. 6,256,756) in view of Weber (U.S. Patent No. 6,274,395). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Regarding claims 2-4, claims 2-4 are dependent from now allowable amended claim 1. As a result, claims 2-4 are now allowable and Applicants respectfully request the rejection of claims 2-4 be withdrawn.

Regarding claims 6-8, claims 6-8 are dependent from now allowable amended claim 5. As a result, claims 6-8 are now allowable and Applicants respectfully request the rejection of claims 6-8 be withdrawn.

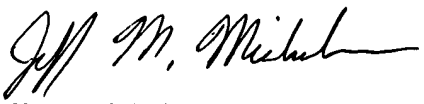
ENTRY OF AMENDMENTS

The amendments to claims 1, 3, 5, 7, 9, 10, 13-16, and 19 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application.

CONCLUSION

Claims 1-19 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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Date: June 8, 2004
JMM/dlm:rmh
Attachment: Formal Drawings (2 sheets, 5 figures)
Annotated Sheet Showing Changes
Copy of Postcard Showing Receipt of IDS and PTO-1449

Document in ProLaw

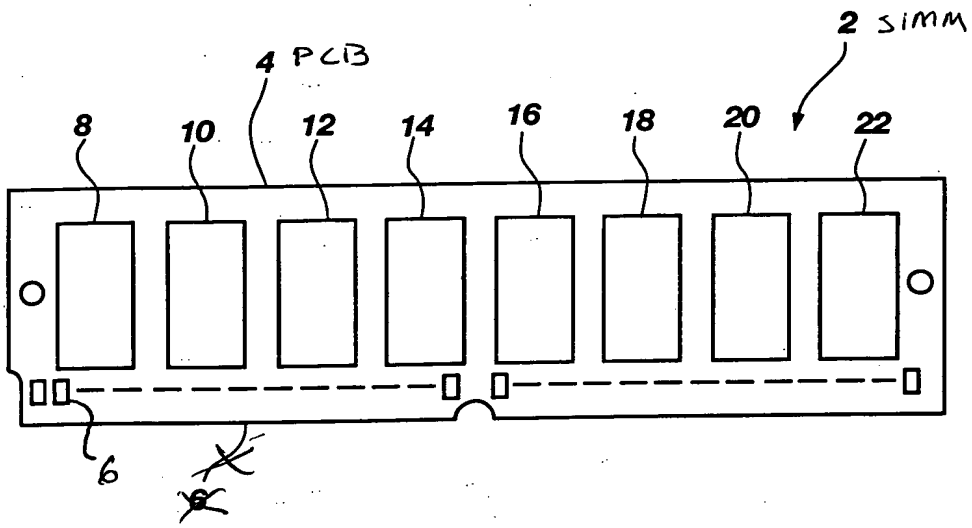

Fig. 1
(PRIOR ART)

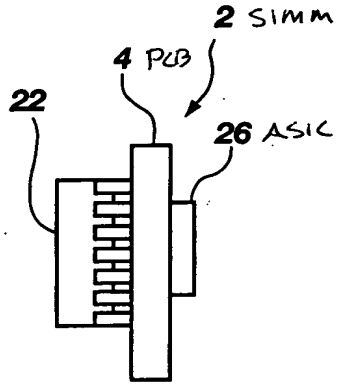

Fig. 2
(PRIOR ART)

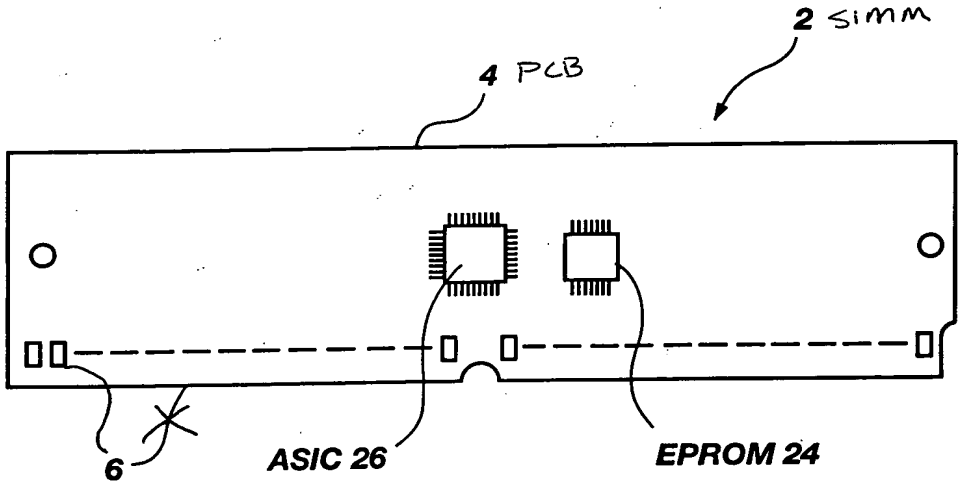

Fig. 3
(PRIOR ART)

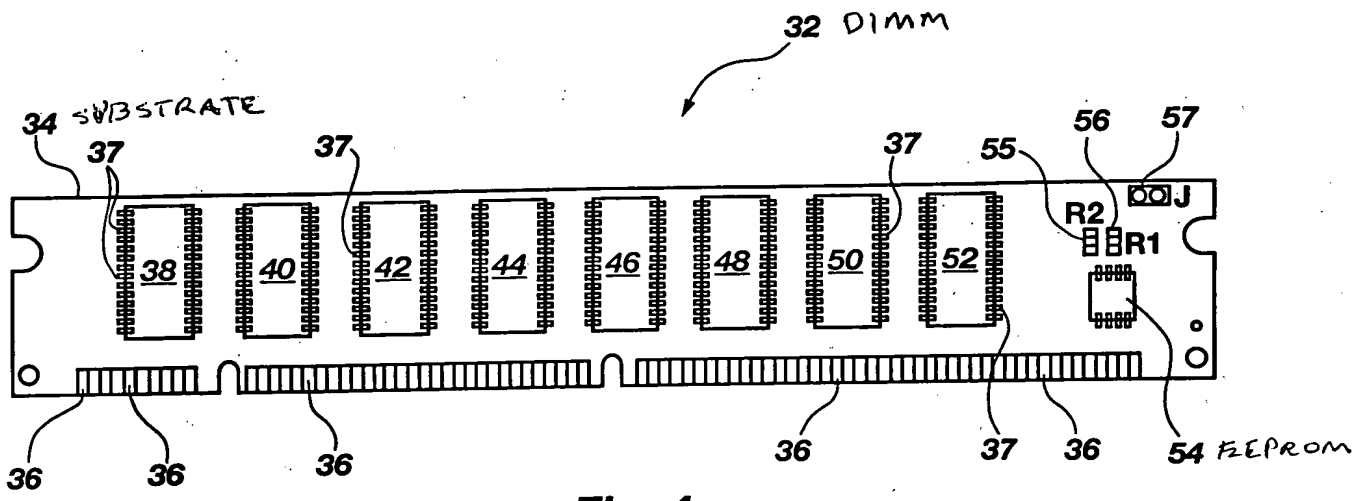

Fig. 4

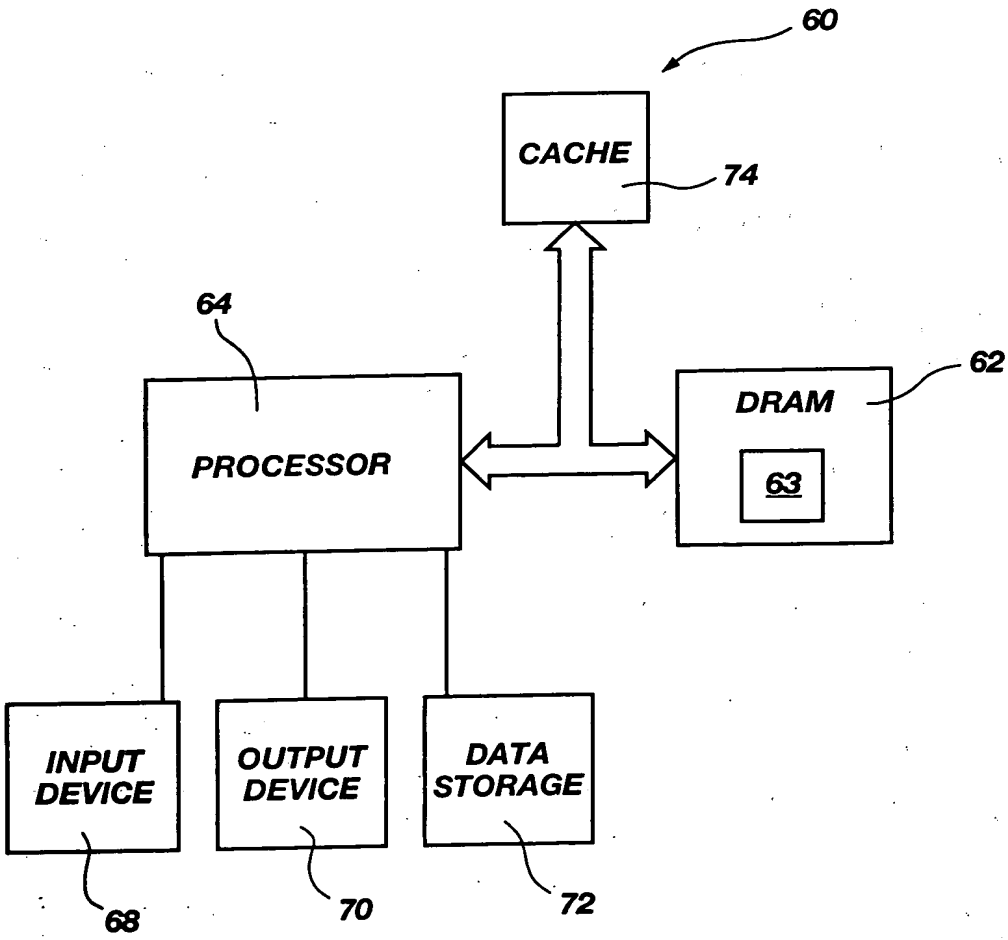

Fig. 5